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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/814,123	04/01/2004	Zheng Zhang	571-932	8039

1059 7590 07/12/2007

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EXAMINER
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PENG, KUO LIANG

ART UNIT	PAPER NUMBER
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1712

MAIL DATE	DELIVERY MODE
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07/12/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/814,123

Applicant(s)

ZHANG ET AL.

Examiner

Kuo-Liang Peng

Art Unit

1712

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 4/27/07 Amendment.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-14, 37-48 and 54-101 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 39, 57-95 and 97 is/are allowed.
- 6) ☒ Claim(s) 1-6, 8-10, 37, 38, 40-48 and 54-56 is/are rejected.
- 7) ☐ Claim(s) 7, 11-14, 96, 98-101 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

1. The Applicants' amendment filed April 27, 2007 is acknowledged. Claims 15-36 and 49-53 are deleted. Claims 1, 38, 41, 54, 56-57 and 65 are amended. Claim 75-98 and 100-102 are added.

2. Applicants should notice that Claim 99 is missing. Therefore, Claims 100-102 are renumbered as Claims 99-101, respectively, in accordance with 37 CFR 1.126. Now, Claims 1-14, 37-48 and 54-101 are pending.

3. Claim objection(s) in the previous Office Action (Paper No. 122306a) is/are removed.

4. Nonstatutory double patenting rejection(s) in the previous Office Action (Paper No. 122306a) is/are removed.

5. Claim rejection(s) under 35 USC 112 in the previous Office Action (Paper No. 122306a) is/are removed.

6. Claim rejection(s) under 35 USC 102 in the previous Office Action (Paper No. 122306a) is/are removed.

Jauregui's declaration under 37 CFR 1.132 filed on April 27, 2007 disqualifies the reference applied in the rejection.

7. The instant Office action is made non-final because of the new ground of rejection based on Brook (US 2004/0034203). Examiner regrets for causing any inconvenience.

8. The text of those sections of Title 35, U.S. code not included in this action can be found in prior Office Action(s).

***Claim Rejections - 35 USC § 103***

9. Claims 1-6, 8-10, 37-38 and 40-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakanishi688 (US 5 009 688) in view of Gill (J. Am. Chem. Soc., (1998), 120, 8587-8598).

Nakanishi688 in view of Gill discloses a method of preparing siliceous materials set forth in the prior Office actions, which is incorporated herein by reference. In addition, for Claim 6, since Nakanishi688 teaches the use of water-

Art Unit: 1712

soluble organic polymers such as **PEO**, **polyacrylic acid**, **polyallyamine**, etc. (col. 2, lines 16-30) Court held, "It is *prima facie* obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose.... [T]he idea of combining them flows logically from their having been individually taught in the prior art." *In re Kerkhoven*, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980) Since these water-soluble organic polymers function for the same purpose, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to use a mixture thereof. For Claim 46, the claim does not necessarily need the specifically claimed species.

For Applicants' argument (Remarks, page 20, last paragraph to page 21, 2<sup>nd</sup> paragraph), Examiner disagrees because it appears that Exhibit D (Figure 5 and Table 1) filed on April 27, 2007 shows that the sample derived from **PGS-PEO** system is **bimodal meso/macroporous**, too. As such, the argument in Brennan's declaration under 37 CFR 132 filed on April 27, 2007 is not persuasive. For Claim 46, the claim does not necessarily need the specifically claimed species.

10. Claims 1-6, 8-10, 37-38, 40-48 and 54-56 are rejected under 35

U.S.C. 103(a) as being unpatentable over Nakanishi875 (US 5 624 875) in view of Gill.

Nakanishi875 in view of Gill discloses a method for producing chromatography column, (bio)sensor, (bio)reactor set forth in the prior Office actions, which is incorporated herein by reference. In addition, for Claim 6, since Nakanishi875 teaches the use of water-soluble organic polymers such as **PEO**, **polyacrylic acid**, **polyallyamine**, etc. (col. 5, lines 42-56) Court held, "It is *prima facie* obvious to combine two compositions each of which is taught by the prior art to be useful for the same purpose, in order to form a third composition to be used for the very same purpose.... [T]he idea of combining them flows logically from their having been individually taught in the prior art." *In re Kerkhoven*, 626 F.2d 846, 850, 205 USPQ 1069, 1072 (CCPA 1980) Since these water-soluble organic polymers function for the same purpose, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to use a mixture thereof. For Claim 46, the claim does not necessarily need the specifically claimed species.

For Applicants' argument (Remarks, page 20, last paragraph to page 21, 2<sup>nd</sup> paragraph), Examiner disagrees because it appears that Exhibit D (Figure 5 and

Table 1) filed on April 27, 2007 shows that the sample derived from **PGS-PEO** system is **bimodal meso/macroporous**, too. As such, the argument in Brennan's declaration under 37 CFR 132 filed on April 27, 2007 is not persuasive.

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

12. Claims 1-5, 8-10, 37-38, 40-48 and 54-56 are rejected under 35 U.S.C. 102(e) as being anticipated by Brook (US 2004/0034203).

Brook discloses a method of preparing siliceous materials comprising hydrolyzing/condensing an organic polyol silane precursor and a PEO. [0071] ([0047], [0049], [0064]-[0080], [0094] and Examples) The hydrolyzation/condensation can be carried out at a pH described in [0071]-[0076] and Examples. Since the process reads on the claimed one, Examiner has a reasonable basis to

believe that both method exhibit phase separation before gelation. For Claim 46, the claim does not necessarily need the specifically claimed species.

13. Claims 7, 11-14 and 57-101 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

None of the above references, taken alone or in combination, teaches or fairly suggests a) PEO-NH<sub>2</sub> or poly(N-isopropylacrylamide) set forth in Claims 7 and 11-14; and b) the use of a biomolecule set forth Claim 96 and Claims 98-101,

***Allowable Subject Matter***

14. Claims 39, 57-95 and 97 are allowed.

None of the above references, taken alone or in combination, teaches or fairly suggests a) the use of a compound of Formula I containing one non-hydrolyzable group set forth in Claim 39 and dependent claims thereof and Claim 62 and dependent claims thereof; and b) the use of a biomolecule set forth in Claim 57 and dependent claims thereof.




15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kuo-Liang Peng whose telephone number is (571) 272-1091. The examiner can normally be reached on Monday-Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski, can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

klp  
June 3, 2007

  
Kuo-Liang Peng  
Primary Examiner  
Art Unit 1712